United States Patent [19]

Cupler, II

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[54] **METHOD AND APPARATUS FOR PERFORMING SURGERY WITHOUT TISSUE INCISION**

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[51] **Int. Cl.**[2] **A61M 1/00;** A61M 7/00; A61B 17/32; A61F 9/00

[58] **Field of Search** ..... 128/305, DIG. 26; 408/59

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[57] **ABSTRACT**

The introduction of surgical instruments into an animal body is effected, without tissue incision, by migrating a specially constructed hollow needle into the body behind a rotary augering tool journalled in the hollow needle. Surgical procedures may then be performed with the rotary tool or the same may be withdrawn from the in situ needle and different surgical implements substituted therefor which may be extended beyond the open end of the needle, as required. In the case of unwanted tissue removal, such as blood clots, cataracts and the like; a rotary masticating tool may be brought to the operative site by introduction through the hollow needle, the unwanted tissue masticated or liquefied and the same withdrawn through the needle bore following removal of the masticating tool. Similarly, fluids may be injected into the body and withdrawn therefrom, as required, through the hollow needle.

The application of the foregoing procedures to cataract surgery makes it possible to remove a cataract while leaving the lens capsule in place. Following removal of the cataract and total contents of the lens capsule, the volume of removed material is then replaced with a compatible lens filler material having a desired refractive index, such as silicone, and the refractive property of the lens is retained obviating the usual massive optical corrections previously associated with cataract surgery.

4 Claims, 18 Drawing Figures